REMARKS

Claims 1-29 and 37-43 are pending in the application with claims 1, 3, 9, 15, and 27 amended herein, claims 30-36 cancelled herein, and new claims 37-43 added herein.

Claim 3 stands rejected under 35 U.S.C. 112, second paragraph as being indefinite. Applicant requests reconsideration. Review of claim 1 from which claim 3 depends reveals that claim 1 sets forth "a valve body having . . . a seat" which constitutes adequate antecedent basis for "the seat" in claim 3. Accordingly, Applicant requests withdrawal of the indefiniteness rejection in the next Office Action.

Claims 1-23 and 25-29 stand rejected under 35 U.S.C. 102(b) as being anticipated by Fukui. Applicant requests reconsideration.

Amended claim 1 sets forth a CVD apparatus that includes, among other features, a deposition chamber defined by a chamber lid and a chamber body having similar thicknesses. The chamber lid or body has an innermost surface inside the chamber and an outermost surface outside the chamber. The CVD apparatus includes a valve body having an entirety of a seat within the chamber lid or body thickness between the innermost and outermost surfaces of the chamber lid or body. Pages 2-3 of the Office Action allege that the top tapered portion of fence 14 and the remainder of fence 14 disclose the claimed chamber lid and chamber body having similar thicknesses. The Office Action further alleges that Fukui discloses the remaining features of claim 1. However, Fukui does not disclose a valve body having an entirety of a seat within the chamber lid or body thickness.

Pages 2-3 of the Office Action allege that an inside surface of needle valve holder 7 of Fukui discloses the claimed seat of a valve body. However, amended claim 1 sets forth that the entirety of the seat is within the chamber lid or body thickness between the innermost and outermost surfaces of the chamber lid or body. Notably, the entirety of the portion of needle valve holder 7 functioning as a valve seat is not within the thickness between any of the innermost and outermost surfaces of fence 14. There exists no part of ultrasonic wave sprayer 1 that could be reasonably considered a valve body having the claimed features. At least for such reason, Fukui does not disclose each and every feature of claim 1 and does not anticipate claim 1.

Claims 2-8 depend from claim 1 and are not anticipated at least for such reasons as well as for the additional limitations of such claims not disclosed. For example, claim 2 set forth that the CVD apparatus comprises an ALD apparatus. Page 6 of the Office Action states that recitation of intended use of a claimed invention must result in a structural difference between the claimed invention and the prior art to patentably distinguish them. It is well known to those or ordinary skill that ALD occurs at very low pressures of, for example, less than 10 Torr. Page 5, line 58 describes a pressure for ultrasonic wave sprayer 1 of Fukui of 0.5 to 5 atmosphere. The pressure of 0.5 atmosphere corresponds to 380 Torr with about 760 Torr being atmospheric pressure. Understandably, operation at the low pressures used in ALD requires specialized deposition chambers. No such special requirements are placed upon fence 14 of Fukui for operation down to 380 Torr. Given the structural differences dictated by the large gap between ALD operating pressure and the Fukui operating pressure, those of ordinary skill would not expect the Fukui device to be capable of performing ALD.

Amended claim 9 sets forth a CVD apparatus than includes, among other features, a deposition chamber having a lid and a body with similar thicknesses, a process chemical opening completely through the lid, and an isolation mechanism proximate the chemical opening. The lid is integral to the isolation mechanism and the isolation mechanism selectively isolates the deposition chamber from receiving material through the chemical opening. Pages 2-3 of the Office Action allege that the top tapered portion of fence 14 and the remainder of fence 14 disclose the claimed chamber lid and body with similar thicknesses. However, Fukui does not disclose a chamber lid having a similar thickness to a chamber body where the lid is integral to an isolation mechanism. No part of fence 14 can be considered in any way integral to ultrasonic wave sprayer 1 or even to needle valve holder 7. Instead, the ultrasonic wave sprayer 1 of Fukui is merely an independent device inserted through fence 14. At least for such reason, Fukui fails to disclose each and every feature of claim 9 and does not anticipate claim 9.

Claims 10-14 depend from claim 9 and are not anticipated at least for such reason as well as for the additional limitations of such claims not disclosed. For example, claim 10 sets forth that the CVD apparatus is an ALD apparatus.

Amended claim 15 sets forth a CVD apparatus that includes, among other features, a deposition chamber having a lid and a body with similar thicknesses and a valve body including a portion of the lid as part of the valve body. The valve body selectively shuts off flow of a process chemical into the chamber, adjusts the flow rate of the chemical into the chamber, or both. As may be appreciated from the discussion above regarding the deficiencies of Fukui as applied to claim 9, Fukui does not disclose

a chamber lid with a similar thickness to the chamber body where the lid is part of a valve body. No portion of fence 14 can be considered to form part of ultrasonic wave sprayer 1 or needle valve holder 7. At least for such reason, Fukui does not disclose each and every feature of claim 15 and does not anticipate claim 15.

Claims 16-23, 25, and 26 depend from claim 15 and are not anticipated at least for such reason as well as for the additional limitations of such claims not disclosed. For example, claim 16 sets forth that the CVD apparatus is an ALD apparatus.

Amended claim 27 sets forth a CVD apparatus that includes, among other features, a deposition chamber having a lid and a body with similar thicknesses, the lid having an inner surface inside the chamber, an outer surface outside the chamber, and an opening defined by sidewalls extending between the inner and outer surfaces. The CVD apparatus includes a valve body having a housing and a seat, at least a part of the housing including at least a part of the outer surface of the lid, at least a part of the opening sidewalls of the lid, or both. At least a part of the seat includes at least a part of the inner surface of the lid, at least a part of the opening sidewalls of the lid, or both.

As may be appreciated from the discussion above regarding the deficiencies of Fukui as applied to claim 9, Fukui does not disclose a chamber lid with a similar thickness to the chamber body where the lid is part of a valve housing and a valve seat. No portion of fence 14 can be considered to form part of ultrasonic wave sprayer 1 or needle valve holder 7. At least for such reason, Fukui does not disclose each and every feature of claim 27 and does not anticipate claim 27.

Claims 28 and 29 depend from claim 27 and are not anticipated at least for such reason as well as for the additional limitations of such claims not disclosed. For example, claim 28 sets forth that the CVD apparatus is an ALD apparatus.

At least for the reasons described herein, Fukui does not anticipate claims 1-23 and 25-29. Applicant requests allowance of such claims in the next Office Action.

Claim 24 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui in view of Waterfield. Applicant requests reconsideration.

Claim 24 depends from claim 15 established herein as allowable and sets forth, among other features, that the valve body includes a plug and a diaphragm between the plug and an annular platform. Page 5 of the Office Action states that the motivation to modify Fukui with the diaphragm valve of Waterfield includes providing "an alternate and equivalent valve." However, the mere fact that the prior art can be modified does not make the modification obvious "unless the prior art suggested the desirability of the modification." In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); MPEP § 2143.01.

Review of Fukui and Waterfield does not reveal any suggestion that a need exists for "an alternate and equivalent valve." Rather, replacement of the Fukui needle valve with Waterfield's diaphragm valve would appear to frustrate the intended operation of Fukui's ultrasonic wave sprayer. Notably, vibrating axis 3 assists in atomizing a solution as described in column 4 of Fukui. No suggestion is made in Fukui or Waterfield of how vibrating axis 3 could be combined with a diaphragm valve. Applicant asserts that the two cannot be combined. Applicant accordingly further asserts that the alleged motivation is merely the Examiner's motivation and not a

motivation suggested by th prior art. As such, the alleged motivation is legally insufficient and the rejection of claim 24 is defective. Applicant thus requests allowance of claim 24 in the next Office Action.

New claims 37-40 are added herein and supported at least by Fig. 1 of the present specification and the associated text. New claims 41-43 are added herein and supported at least by Fig. 2 of the present specification and the associated text.

Applicant asserts that claims 1-29 and 37-43 are in condition for allowance and requests such allowance in the next Office Action.

Applicant notes that an initialed copy of Form PTO-1449 has not yet been received for an IDS previously filed on March 15, 2001 with the initial filing papers. Applicant herewith submits a copy of the IDS for the Office's convenience and requests consideration of the references cited therein and return of the initialed form.

Respectfully submitted,

Dated: 29 Aug 2003 By: _____
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